N. Pennington[a,*], P.R. Loughenbury[b], N. Green[b]

[a] *Dewsbury and District Hospital, UK*
[b] *Scarborough General Hospital, UK*

Introduction: Missed compartment syndrome can have potentially devastating long-term impacts on individuals. In the reported literature ipsilateral femoral fracture has been present in 52–58% of acute thigh compartment syndromes. Time to diagnosis of acute thigh compartment syndrome has been cited as a key determinant of subsequent functional outcome. The role of femoral nerve blocks in splinting of femoral fractures is somewhat controversial as it can be argued it may mask early compartment syndrome. We present the attitudes of emergency department (ED) and orthopaedic staff at acute NHS trusts in England with regard to this issue.

Methods and materials: Survey of all 171 acute hospitals in the United Kingdom accepting trauma admissions. On-call middle grade doctors in both the emergency and orthopaedic departments were contacted to complete a telephone survey into departmental protocol and their own experience of femoral nerve blocks for lower limb fractures.

Results: Middle grades from all 171 acute trusts completed the survey (100% response rate). 54 emergency departments (30.8%) reported having a protocol for the use of femoral nerve blocks. Middle grades in the ED reported using a nerve block routinely in 95 hospitals (54%) with 63 opting for a long-acting agent and 32 for short-acting. Of those that did not 70% ($n = 53$) felt they were unnecessary, 21% ($n = 16$) were not confident in using the technique and 9% ($n = 7$) had worries over compartment syndrome. 116 out of 171 (68%) said they would be worried about compartment syndrome in high-energy injuries. Orthopaedic departmental protocols for nerve block use were reported in 16 trusts (9%). 45 orthopaedic middle grades (26%) indicated that they would use them routinely with 17 using long-acting and 28 using short-acting agents. 59.5% ($n = 75$) of orthopaedic middle grades that did not use nerve blocks felt they were unnecessary, while 22% ($n = 28$) had worries about compartment syndrome and 18% ($n = 23$) were not confident with the technique. 131 out of 171 (77%) orthopaedic middle grades would be more worried about compartment syndrome in high energy injuries.

Conclusion: Most units appear to have no protocol guiding the use of femoral nerve blocks. ED middle-grade staff were more likely to use a block than orthopaedic staff, and the most common reason for not doing so was feeling that a block was unnecessary. Our results suggest that there is future scope for developing a universal protocol for analgesia when splinting femoral fractures.

doi:10.1016/j.injury.2010.07.190

Motion artefact in CT scan of the cervical spine simulating a fracture dislocation injury

E.F. Ibrahim*, S.M. McDonnell, N.J. Henderson, S.E. Blagg

Stoke Mandeville Hospital, Buckinghamshire NHS Hospitals Trust, United Kingdom

Aim: Care is required when using computed tomography (CT) reconstruction of the cervical spine as the primary diagnostic investigation for trauma, as it may be misleading. We present an illustrated case highlighting the danger of motion artefact in cervical spine CT leading to the misdiagnosis of a fracture dislocation.

Methods: We describe the course of a 23-year-old unrestrained driver involved in a high-speed road traffic accident presenting with moderate lower cervical spine pain and tenderness without struction images suggested an unstable retrolisthesis of C7 on T1. This radiological diagnosis of significant cervical spine injury was in contrast to the patient's clinical picture.

After the patient was referred as a candidate for spinal surgery, plain radiographs and MRI performed to further evaluate the injury revealed no abnormality. Review of axial CT scan images revealed artefact in both the vertebra and surrounding tissue at C7 level related to movement of the patient during image acquisition.

Conclusion: This case illustrates a limitation of using CT as the sole modality for cervical spine imaging in trauma. Clinicians rely significantly on CT reconstructions for initial diagnosis of spinal injury. Motion artefact can create errors in integration of axial image data into sagittal reconstruction. Clinicians must conduct thorough review of axial imaging, and in cases of uncertainty request duplicate or complementary imaging.

doi:10.1016/j.injury.2010.07.191

Dynamic hip screw fixation of fractures of the femoral neck—a useful technique for accurate positioning

J.D. Craik*, A. George, S. Richards, R. Middleton

Department of Trauma and Orthopaedics, Poole General Hospital, UK

It is estimated that every year in the United Kingdom, 70,000 patients are admitted to hospital with fractures of the femoral neck. A significant proportion of these patients' are managed with internal fixation using the dynamic hip screw. Successful treatment of this injury in this way requires the lag screw to be correctly positioned within the centre of the long axis of the femoral neck, so as to prevent the complications of screw cut-out and fracture fixation failure.

To achieve correct screw orientation, a guide-wire is initially passed under X-ray surveillance with both anterio-posterior and lateral C-arm imaging. Owing to the anatomical anteversion of the femoral neck, a lateral view obtained with the C-arm in a horizontal position provides a slightly oblique view to the approach of the guide-wire. We propose therefore that by tilting the C-arm 15–20° from the horizontal, we adjust for femoral neck anteversion, and achieve an image with the head, neck, greater tuberosity and femoral shaft in a straight line. We provide examples of these views in contrast with those obtained from the purely horizontal approach.

In our experience, accurate placement of the guide-wire is more easily obtained with this technique and as a result may be a valuable tool for orthopaedic surgeons in training.

doi:10.1016/j.injury.2010.07.192

Erect chest radiograph in the setting of the acute abdomen: essential tool or waste of resources and unneccesary?

S. Alazzawi[a], W.B. Sprenger de Rover[b,*], G. Morris-Stiff[c], M. Lewis[d]

[a] *The South West London Elective Orthopaedic Centre, Epsom General Hospital*
[b] *Norfolk & Norwich University Hospital*
[c] *Cleveland Clinic Foundation, Cleveland, Ohio*
[d] *Royal Glamorgan Hospital, UK*

The aim of this study was to address this issue by examining both the quantity and quality of requests made for emergency chest radiographs in patient presenting with abdominal symptoms. The Royal College of Radiology recommends a chest radiograph be